

## REMARKS

### 1. Office Action Summary

Prior to entry of this amendment, claims 1-20 are pending. Claims 1, 9, 19 and 20 are independent claims. In the Office Action dated January 24, 2003, the Examiner rejected claim 15 under § 112, second paragraph. The Examiner also rejected claims 1-11 and 14-20 under 35 U.S.C. § 102(b) as being anticipated by Kimura et. al (U.S. 5,651,724). Claims 12 and 13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kimura et al.

### 2. Claim Rejection – 35 U.S.C. § 112

The Examiner rejected claim 15 under § 112, second paragraph. Specifically, the Examiner noted that claim 15 repeated a limitation of claim 9 and thus did not further limit the invention of claim 9. The Applicant has cancelled claim 15 and therefore respectfully requests that this rejection be withdrawn.

### 3. Claim Rejection – 35 U.S.C. § 102

The Examiner has rejected claims 1-11 and 14-20 under 35 U.S.C. § 102(b) as being anticipated by Kimura et. al. Applicant respectfully traverses this rejection. Kimura et al. discloses a substrate holder assembly for immobilizing a substrate during polishing. Pressure is applied to a wafer during polishing by holding the wafer against an abrasive cloth on a turntable well as by the application of an pressurized air to a space above the wafer and the application of water that has been applied to the backside of the wafer prior to polishing.

#### Claims 1, 9, 19 and 20

Applicant has amended claims 1, 9, 19 and 20 to state that the spindle applies a downward mechanical force to the semiconductor wafer during planarization and so that the shape of the spherical cap distributes the downward mechanical force applied by the spindle as first and second forces applied by the outer and inner regions, respectively, of the spherical cap. Unlike claims 1, 9, 19 and 20, Kimura et al. applies forces, in addition to the force applied by pressing the wafer against the abrasive cloth on the turntable, via pressurized air supplied by an external source and by water applied to the back side of the wafer prior to polishing (Col. 5,

lines 55-59 and col. 6, lines 55-64). Unlike claims 1, 9, 19 and 20, Kimura et al. does not disclose that the force that is applied by pressing the wafer against the abrasive cloth is further distributed as first and second forces due to the shape of the ring holder that is holding the wafer. Instead, the forces are applied separately via pressurized air supplied by an external source and water that has to be separately to the backside of the wafer prior to the polishing process. Thus, Applicant respectfully asserts that every element of claims 1, 9, 19 and 20 are not disclosed by Kimura et al. and therefore requests that these rejections be withdrawn.

Claims 2-8 depend from claim 1. Applicant respectfully asserts that dependent claims 2-8 are allowable for at least the same reasons as provided for claim 1. Claims 10-14 and 16-18 depend from claim 9. Applicant respectfully asserts that dependent claims 10-14 and 16-18 are allowable for at least the same reasons as provided for claim 9. Reconsideration is respectfully requested.

#### **4. Claim Rejection – 35 U.S.C. § 103**

The Examiner has rejected Claims 12 and 13 under 35 U.S.C. § 103(a) as being unpatentable over Kimura et al. Applicant respectfully traverses this rejection. A brief summary of Kimura et al. has been provided above.


##### **Claims 12 and 13**

Claims 12 and 13 depend from claim 9 and thus their allowability follows from claim 9. As noted above, claim 9 has been amended so that the spindle applies a downward mechanical force to the semiconductor wafer during planarization and so that the shape of the spherical cap distributes the downward mechanical force applied by the spindle as first and second forces applied by the outer and inner regions, respectively, of the spherical cap. In Kimura et al., and unlike claim 9, additional forces, in addition to the force applied by pressing the wafer against the abrasive cloth on the turntable, are applied separately via pressurized air supplied by an external source and water that has to be separately to the backside of the wafer prior to the polishing process. Therefore, Applicant respectfully asserts that dependent claims 12 and 13 are allowable for at least the same reasons as provided for claim 9.

### SUMMARY

Applicant has cancelled Claim 15. Applicant respectfully submits that pending claims 1-14 and 16-20 are allowable in their present form and respectfully requests that the Examiner grant early allowance of this application. The Examiner is invited to contact the undersigned attorney for the Applicant via telephone if such communication would expedite this application.

Respectfully submitted,

A handwritten signature in cursive script, reading "Anastasia Heffner", written over a horizontal line.

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